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Victorian Certificate of Education 2009

STUDENT NUMBER

Figures											
Words											

Letter

PSYCHOLOGY

Written examination 1

Wednesday 10 June 2009

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	Area of study	Number of questions	Number of questions to be answered	Number of marks
A	1. Brain and nervous system	18	18	18
	2. Visual perception	13	13	13
	3. States of consciousness	13	13	13
B	1. Brain and nervous system	6	6	18
	2. Visual perception	5	5	14
	3. States of consciousness	3	3	14
				Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 19 pages.
- Answer sheet for multiple-choice questions.

Instructions

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer all questions in pencil on the answer sheet provided for multiple-choice questions. Choose the response that is **correct** or that **best** answers the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

AREA OF STUDY 1 – Brain and nervous system

Question 1

The cerebral cortex

- A. is wrinkled and this increases the surface area.
- B. connects the two hemispheres of the brain.
- C. is approximately 3.5 cm thick.
- D. controls sleep functions.

Question 2

Which of the following is the most accurate description of the association areas of the cortex?

- A. They are located in the left hemisphere and associate input from the right hemisphere.
- B. They integrate information from different parts of the brain.
- C. They include the motor and sensory areas in each lobe.
- D. They are crucial for providing basic survival needs.

Question 3

Which of the four lobes is typically responsible for receiving and processing auditory information?

- A. frontal
- B. parietal
- C. occipital
- D. temporal

Question 4

In most individuals, which one of the following groups of functions is typical of the right hemisphere of the brain?

- A. logical reasoning, writing
- B. analysing information, recognition of faces
- C. recognition of faces, comprehension of emotion
- D. imagination and creativity, analysing information

Question 5

If you put your hand over your right eye, and use your left eye to tell the time on the clock on the wall in the examination room, the visual information from your left eye would be processed in the

- A. left occipital lobe.
- B. right occipital lobe.
- C. somatosensory cortex.
- D. left and right occipital lobes.

Question 6

When a basketballer shoots for a goal, which part of the brain sends the message instructing her to raise her shooting arm?

- A. the somatosensory cortex
- B. the prefrontal lobe
- C. the occipital lobe
- D. the motor cortex

Question 7

Neglect syndrome (also known as spatial neglect) is a condition where a patient typically behaves as though the left side of their world does not exist.

This condition is caused by brain damage to the

- A. right occipital lobe.
- B. right parietal lobe.
- C. left occipital lobe.
- D. left parietal lobe.

Question 8

The peripheral nervous system contains

- A. the skeletal muscles.
- B. the brain and spinal cord.
- C. all the nerves of the central nervous system.
- D. all the nerves outside the brain and spinal cord.

Question 9

Maria felt an insect crawling on her right hand. The _____ initially registered this information and shortly afterwards Maria shook her arm and the insect flew away.

- A. motor cortex of her left hemisphere
- B. motor cortex of her right hemisphere
- C. somatosensory cortex of her left hemisphere
- D. somatosensory cortex of her right hemisphere

Question 10

The alarm reaction stage of the General Adaptation Syndrome (GAS) is usually characterised by

- A. an increase in illnesses such as the flu.
- B. an immediate release of cortisol into the bloodstream.
- C. an initial decrease in blood pressure and body temperature, followed by an increase in both.
- D. an initial increase in blood pressure and body temperature, followed by a decrease in both.

Question 11

According to the General Adaptation Syndrome (GAS), in the first stage the body produces physiological changes that accompany the fight/flight response in an attempt to resist the stressor.

If the stressor is **not** removed at this point

- A. the body will enter the 'shock' phase.
- B. the body's arousal will return to normal.
- C. the body will maintain the fight/flight response.
- D. adrenaline will continue to be released into the bloodstream and cortisol will stop being released.

Question 12

Karlee, a Year 12 student, felt very stressed during the year. As her examinations came closer, she started complaining of painful stomach aches. After her doctor examined her, he concluded that her stomach aches were psychosomatic.

This diagnosis means that Karlee's stomach aches were

- A. caused by her imagination.
- B. part of her fight/flight response.
- C. genuine physical symptoms with psychological causes.
- D. genuine psychological symptoms with physical causes.

Question 13

Zoe, an elderly woman with a pacemaker, needs to have a brain scan to investigate a possible brain abnormality.

If her neurosurgeon wants to investigate the function of Zoe's brain, but avoid invasive injections, which of the following would be the best technique for the neurosurgeon to use?

- A. CT scan
- B. PET scan
- C. MRI scan
- D. fMRI scan

Question 14

The autonomic nervous system accounts for

- A. higher-order thinking.
- B. the perception of pain.
- C. the ability of patients to move limbs even when unconscious.
- D. the ability of patients to continue breathing even when unconscious.

Question 15

A researcher was interested in studying the effects of stress on the immune system. One hundred healthy volunteers filled out a stress-rating scale and were then injected with a non-life-threatening virus. Based on what is known about stress and the immune system, the researcher most likely found that volunteers who reported higher levels of stress on the stress-rating scale

- A. did not report any effect of the injected virus.
- B. showed lower rates of infection than those with lower stress levels.
- C. felt energised as their bodies entered the resistance stage of the GAS.
- D. had lower levels of the disease-fighting white blood cells than those with lower stress levels.

Question 16

Which of the following statements about case studies is the most correct?

- A. Case studies can provide ideas for further research.
- B. A case study is a useful experimental method.
- C. A case study uses only non-invasive techniques to study the brain.
- D. Results from a case study are able to be generalised in most situations.

Question 17

Which of the following is the most correct statement about electrical stimulation of the surface of the brain?

- A. It is a non-invasive method.
- B. The patient may be conscious.
- C. The electrical current cannot be precisely delivered.
- D. The electroencephalograph delivers a mild electrical current.

Question 18

Dr Hart wishes to undertake a case study of some patients who have suffered brain damage. Several of the patients cannot speak English. Dr Hart translates the consent document into the patients' first language and ensures that it is fully explained to the patients before asking them if they wish to participate.

The ethical principle Dr Hart has adhered to is

- A. justice.
- B. privacy.
- C. beneficence.
- D. respect for persons.

AREA OF STUDY 3 – States of consciousness**Question 32**

The awareness of objects and events in the external world, and of the subject's own existence and activities, is defined as

- A. consciousness.
- B. focused attention.
- C. the sleep/wake cycle.
- D. an altered state of consciousness.

Question 33

Bray is experiencing an altered state of consciousness that has led to heightened arousal. Therefore, Bray is experiencing a(n) _____ in perspiration that causes a(n) _____ in the level of electrical conductivity on the surface of his skin.

- A. increase; increase
- B. decrease; increase
- C. decrease; decrease
- D. increase; decrease

The following information relates to Questions 34 and 35.

Billie conducted an experiment that required participants to perform three different types of tasks. The tasks differed in the level of complexity according to the following table.

Task	Level of complexity
A	difficult
B	medium
C	simple

First Billie asked the participants to perform each task individually. She noted the number of errors that each participant made on each task.

Billie then asked each participant to perform two of the tasks simultaneously. They performed all three combinations (tasks A and B, tasks A and C, and tasks B and C) in random order.

Question 34

Compared to the other tasks, _____ requires _____ attention to be completed successfully.

- A. A; divided
- B. A; selective
- C. C; divided
- D. C; selective

Question 35

When performed simultaneously, which of the following tasks were most likely able to be completed with the least number of errors?

- A. A and B
- B. B and C
- C. A and C
- D. There will be no difference in errors between the three combinations.

Question 36

Dr Shapiro, a school teacher, is showing a documentary program in his class. Near the end of the class he notices that some students are not watching the television screen. Colin is busy working on a crossword, Monica is staring, dreamily, out the window and Keong has recently fallen asleep at the table.

If Dr Shapiro could monitor his students' brainwave patterns, he is likely to find that the prominent brainwave pattern for Colin is _____ waves; Monica is _____ waves and Keong is _____ waves.

- A. beta; alpha; theta
- B. alpha; beta; theta
- C. theta; alpha; delta
- D. beta; alpha; delta

Question 37

During Stage 1 sleep, a person

- A. is more likely to dream than during other stages.
- B. is often difficult to wake up.
- C. has a very low body temperature.
- D. may experience very brief muscular contractions.

Question 38

Stage 3 sleep primarily consists of

- A. beta and theta waves.
- B. theta and delta waves.
- C. alpha and delta waves.
- D. alpha and theta waves.

Question 39

Recordings from an electromyograph (EMG) can distinguish between rapid eye movement (REM) sleep and non-rapid eye movement (NREM) sleep because there is

- A. never any movement of the muscles in REM sleep, unlike NREM.
- B. never any movement of the muscles in NREM sleep compared to REM.
- C. an increase in movement of the muscles in REM sleep compared to NREM.
- D. an increase in movement of the muscles in NREM sleep compared to REM.

Question 40

Renee is extremely tired, due to lack of sleep the previous night. As a result, she is more likely to experience difficulty in performing _____ tasks while her ability to perform _____ tasks will probably be unaffected.

- A. simple; complex
- B. complex; simple
- C. verbal; nonverbal
- D. nonverbal; verbal

Question 41

Mel is suffering from hypersomnia.

He is likely to

- A. fall asleep immediately upon going to bed.
- B. have difficulty falling asleep upon going to bed.
- C. experience sudden REM sleep episodes during wakeful periods of the day.
- D. experience sudden NREM sleep episodes during wakeful periods of the day.

Question 42

Sleep apnea is defined as

- A. loud, long and consistent snoring during sleep.
- B. briefly awakening from sleep throughout the night.
- C. temporary cessation of breathing during sleep for 2 to 20 seconds.
- D. temporary cessation of breathing during sleep for 20 seconds to 2 minutes.

Question 43

Sleep talking occurs in

- A. REM sleep only.
- B. Stage 1 sleep only.
- C. Stages 3 and 4 sleep only.
- D. both REM and NREM sleep.

Question 44

Harvey, a university researcher, designs an independent-groups experiment. The experiment is testing the effect of a new drug on relieving symptoms of sleep apnea. He obtains informed consent from the participants. He uses a single blind experiment.

This means that

- A. only one group of participants know whether they are receiving the placebo or the real drug.
- B. the participants do not know about the nature of the experiment, unlike Harvey who does know.
- C. Harvey does not know about the nature of the experiment, unlike the participants who do know.
- D. the participants do not know whether they are taking the placebo or the real drug, unlike Harvey who does know.

SECTION B – Short answer questions**Instructions for Section B**

Answer all questions in the spaces provided.

AREA OF STUDY 1 – Brain and nervous system**Question 1**

Pronouncing words correctly is a function of _____'s area, which is typically located in

the _____ lobe.

2 marks

Question 2

Sperry pioneered research on split-brain patients.

In one study, a picture of an object was presented to the right visual field of split-brain patients. The patients were all right-handed males. The patients were then shown a number of objects. They were asked to identify the original pictured object by pointing to it. They could use either hand. They were also asked to name the object.

Sperry then presented the picture of another object to the left visual field. The patients were then asked to identify the original pictured object from among a number of other objects by pointing to it with either hand. They were also asked to name the object.

What were the results for this study in regard to the following?

- a. when patients were asked to name the pictured object presented to the right visual field

1 mark

- b. when patients were asked to identify the pictured object presented to the right visual field

1 mark

- c. when patients were asked to name the pictured object presented to the left visual field

1 mark

- d. when patients were asked to identify the pictured object presented to the left visual field

1 mark

SECTION B – AREA OF STUDY 1 – continued

Question 3

One of the limitations of using the polygraph as a lie detector is that some people may be able to falsify the readings by inflicting pain on themselves.

Explain how inflicting pain may lead to a false reading.

3 marks

Question 4

Alyse stays up late to watch a horror movie. During the movie she becomes very frightened and her fight/flight response is triggered, and then she calms down.

- a. Which branch of the autonomic nervous system is responsible for triggering Alyse's fight/flight response?

1 mark

- b. Describe two physiological responses that Alyse may experience when her fight/flight response is triggered.

2 marks

- c. Explain how these physiological responses aid survival in a life-threatening situation.

1 mark

SECTION B – AREA OF STUDY 1 – continued
TURN OVER

Question 5

Farrah's neurologist has explained that she needs to undergo a Computerised Tomography (CT) scan to assess the damage to her brain.

- a. How is structural information about the brain collected by a CT scan?

1 mark

- b. Compared to an MRI scan, what is a significant limitation of the CT scan?

1 mark

- c. The damage to Farrah's brain is within the association area of her frontal lobe. Describe one possible effect that could result from this damage.

1 mark

Question 6

David is experiencing some intense stress as a result of traumatic events both at home and at school. As a consequence, David has experienced some uncharacteristic psychological and physiological effects.

- a. What is one emotional response that David could be experiencing as a result of this intense stress?

1 mark

- b. David is now suffering from indigestion.

In terms of the autonomic nervous system, explain why David's digestive system has been affected by the intense stress.

1 mark

AREA OF STUDY 3 – States of consciousness**Question 12**

Jim is unwell and suffering from a very high fever. He is displaying a number of signs that indicate that he is experiencing an altered state of consciousness, including cognitive and perceptual changes from normal waking consciousness.

Give one specific example of a cognitive change and one specific example of a perceptual change that Jim may be experiencing.

Cognitive change _____

Perceptual change _____

2 marks

Question 13

Plinio visited a sleep laboratory for the night. In the laboratory a number of physiological measures were taken. These measures included an electrooculogram (EOG) and an electroencephalogram (EEG).

- a. i. What does an electrooculogram (EOG) measure?

- ii. What does an electroencephalogram (EEG) measure?

1 + 1 = 2 marks

- b. Describe the typical recordings from the electrooculogram (EOG) during Stage 4 sleep.

1 mark

- c. Name and describe the two unique characteristics shown on the electroencephalogram (EEG) that indicate Plinio had entered Stage 2 sleep.

1. _____

2. _____

2 marks

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- d. Towards the morning, Plinio had a nightmare.
In terms of stages of sleep, explain why he is more likely to experience nightmares towards the morning.

2 marks

Question 14

Professor Latina, a sleep researcher, is interested in finding out if meditating for 15 minutes before bedtime will help reduce insomnia compared to no meditation. She recruits 50 people who suffer from insomnia. Professor Latina employs a repeated measures design.

- a. In terms of the procedure for this study, what does this mean?

1 mark

- b. A repeated measures design will minimise extraneous variables that an independent measures design will not.
Name and explain one such extraneous variable.

2 marks

- c. Professor Latina's study was approved by an ethics committee. She followed all the ethical guidelines including informed consent.
What two main pieces of information must be given to participants in order for them to decide whether or not to consent to being in the study?

1.

2.

2 marks

END OF QUESTION AND ANSWER BOOK

GENERAL COMMENTS

Student performance on the June 2009 Psychology examination was reasonably consistent across the three Areas of Study. As usual, the scores in the multiple-choice section were higher than those in the short answer section.

In the multiple-choice section all three Areas of Study were well answered. The mean score for 'Brain and nervous system' and 'States of consciousness' was 73 per cent. 'Visual perception' had a mean score of 70 per cent. The mean scores were slightly lower than in 2008.

As in previous years, students who did not perform well on the short answer section wrote answers that often lacked precision and completeness in their descriptions and definitions, failed to refer to appropriate psychological information or failed to provide appropriate examples in their answers (even when the requirement for this was explicitly stated in the question). Students had the most difficulty with 'Visual perception', with a mean score of 47 per cent, while 'States of consciousness' had a mean score of 51 per cent. 'Brain and nervous system' was the best answered Area of Study with a mean score of 66 per cent.

Teachers had clearly directed students' attention to key concepts and skills in the *VCE Psychology Study Design*. In general, students demonstrated good knowledge and understanding of the study design. However, it was noted that where a specific context was stipulated in a question, students often ignored the instruction and gave general answers. As in previous years, many students did not achieve full marks because they failed to address all aspects of the question in their answers. This was particularly true in Question 6b, where the context was ignored and in Question 11 where the scenario of the balloons and trees was required. Many answers contained only generic descriptions.

Students need to read the short answer questions very carefully and then check their answers against the requirements of the question. Highlighting the command terms before planning a response is good practice.

Short answer questions worth two marks generally require two key terms and/or pieces of information. Short answer questions worth one mark require one, or sometimes two, key terms and/or pieces of information. Questions worth three or four marks have an appropriate number of lines in the answer booklet. It is worth noting, however, that the space provided for an answer should be regarded as a guideline only and it is entirely permissible for students to write in the margins or in blank spaces on the paper, as long as such writing is clearly identified as being an answer to a specific question.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

Students should answer all questions in the multiple-choice section of the paper. If they are unsure of the response, they should mark the response that is their 'best guess'—it is always possible to change a response by carefully erasing and re-shading. Answering all questions also decreases the chance that further answers will be out of synchronisation.

This section of the paper was moderately well answered with a small number of questions resulting in a correct response rate of less than 50 per cent. These questions are discussed below.

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Brain and nervous system					
1	79	9	11	1	
2	4	79	14	4	
3	1	4	3	92	
4	5	3	70	23	
5	4	45	1	50	It is emphasised that information from each eye is processed in both hemispheres of the brain. Information from the left half of the retina in both the left and right eyes is processed in the left hemisphere, and information from the right half of each retina is processed in the right hemisphere.
6	5	1	0	94	
7	19	76	2	3	
8	10	4	5	82	
9	4	1	93	2	
10	3	19	49	28	The Alarm (or Alarm reaction) stage of the General Adaptation Syndrome is characterised by two phases – shock, in which the body's resistance to the stressor drops, followed by countershock, in which resistance is increased. Features of shock include reduction in heart rate and body temperature.
11	28	3	68	20	Twenty-eight per cent of students chose option A and 20 per cent chose option D. This suggests that students who chose these options had poor understanding of the General Adaptation Syndrome.
12	3	3	81	13	
13	63	18	8	11	Although there is some debate about the safety of a pacemaker in an fMRI scan, VCE students have been taught that MRI scans in general are not safe when a patient has a pacemaker. It was decided, therefore, that there was no fully correct answer among the options given on the examination paper and all students were credited with the mark for this question.
14	2	4	3	91	
15	5	9	10	76	
16	49	12	29	10	A significant minority of students chose option C 'A case study uses only non-invasive techniques to study the brain'. Since techniques such as split-brain research and ESB (both techniques involving case-studies) had been studied within this Area of Study, this was a surprising statistic.
17	6	60	14	19	
18	18	2	22	58	
Area of Study 2 – Visual perception					
19	4	84	5	7	
20	13	82	3	2	
21	9	4	8	79	
22	41	33	21	4	Option B 'selecting groups of visual data to form a whole image' and option C 'selecting data in the visual field for focusing on the retina' refer to the process of 'reception'.
23	3	13	3	81	
24	85	8	3	5	

Question	% A	% B	% C	% D	Comments
25	46	47	2	5	Students who chose option B did not show understanding of size constancy, which states that the size of the retinal image for a familiar object (or one that is moved closer) does not affect perception of the size of the object itself.
26	33	7	59	1	Students who chose option A selected the answer that was exactly opposite to the correct response (Option C).
27	1	4	5	90	
28	78	9	2	10	
29	22	59	9	10	
30	68	7	20	5	
31	84	22	1	13	
Area of Study 3 – States of consciousness					
32	96	2	0	2	
33	84	5	2	9	
34	8	85	4	3	
35	6	84	5	5	
36	76	7	4	13	
37	7	2	4	87	
38	3	84	6	6	
39	33	7	36	24	Students who chose option A must be extremely wary of choosing absolute statements. The EMG measures electrical activity in muscles of the body whereas the EOG is used to measure electrical activity in muscles that control eye movement.
40	59	37	2	2	
41	68	9	10	13	
42	2	3	21	74	
43	7	3	42	48	Forty-two percent of students chose option C. This suggests that students are confusing sleep talking, which may occur in any stage of sleep, with sleepwalking, which occurs only in stages 3 and 4 of NREM sleep.
44	6	10	1	83	

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Area of Study 1 – Brain and nervous system

This section was generally well answered.

Question 1

Marks	0	1	2	Average
%	14	14	72	1.6

Broca's left frontal

This question was well answered. All three pieces of information were required for full marks.

Question 2

As all objects in Questions 2b, and 2d, were visible in both the left and right visual fields, it is possible that a process of 'cross-cuing' would occur, alerting both hemispheres to the identity of the object. Students could indicate that either hand could be used (or not specify a particular hand) and be awarded a mark.

Question 2a.

Marks	0	1	Average
%	35	65	0.7

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They could name the object.

Question 2b.

Marks	0	1	Average
%	0	100	1

They could point to the object.

Question 2c.

Marks	0	1	Average
%	38	62	0.6

They could not name the object.

Question 2d.

Marks	0	1	Average
%	0	100	1

They could point to the object.

Question 3

Marks	0	1	2	3	Average
%	28	23	26	22	1.4

- Any of:
- during the base rate phase (while establishing the baseline measures) a person could induce a heightened state of arousal through inflicting pain on themselves
 - when answering control questions a person could induce a heightened state of arousal through inflicting pain on themselves and the reading would be high for these questions. Arousal would also be high when a person answers relevant questions, either because of the effects of inflicting pain, or because of heightened arousal through lying. The difference between the control and relevant questions would be negligible and it would appear as if the person was not lying
 - during all questions, a person could inflict a high level of pain on themselves, causing arousal at a high level. Minor changes due to lying would not be noticeable over the high arousal due to the pain.

Question 4a.

Marks	0	1	Average
%	12	88	0.9

Sympathetic

Question 4b.

Marks	0	1	2	Average
%	6	9	84	1.8

- Two of:
- heart rate increases
 - pupils dilate
 - dry mouth
 - perspiration increases
 - increase in blood pressure
 - increase in breathing rate
 - bronchioles (airways) dilate
 - release of sugar (glucose) from storage
 - release of fat from storage
 - slowing (inhibition) of the digestive process
 - release of adrenalin/noradrenalin
 - blushing
 - goose bumps.

Question 4c.

Marks	0	1	Average
%	51	49	0.5

One of:

- heart rate increases to pump blood (and nutrients/oxygen) around the body faster, carrying more oxygen and glucose to the muscles
- blood pressure increases to push blood through capillaries at a faster rate
- breathing rate goes up to take in more oxygen
- bronchioles dilate to allow more oxygen into the lungs
- pupils dilate to let in more light and enhance vision
- digestion is slowed to divert oxygen to muscles to allow a faster response
- release of sugar and fat to provide instant energy to skeletal muscles
- release of adrenalin and noradrenalin to activate muscles and organs to deal with the life-threatening situation.

It should be noted that many students stated that 'the heart beats faster to pump more blood around the body'. This is incorrect as the amount of blood in the body remains the same.

Question 5a.

Marks	0	1	Average
%	71	29	0.3

X-rays of the brain are taken from different angles. These images are combined by a computer program to produce a cross section image of the brain.

Question 5b.

Marks	0	1	Average
%	55	45	0.5

- The CT image is not as detailed or as clear as an MRI image.
- The CT scan is black and white whereas an MRI scan is colour -- there is better contrast in an MRI.
- The CT scan uses powerful X-rays and cannot be repeated within several months as there is a high risk of cancer.
- The CT scan requires an injection of iodine to provide contrast -- this is an invasive technique.

Many students suggested that the injection carries radioactive ions. This is incorrect, showing confusion with the PET scan where glucose carries a radioactive marker.

Question 5c.

Marks	0	1	Average
%	40	60	0.6

Changes to personality or changes in any of:

- the ability to perform complex mental functions
- the ability to plan/organise (problems with executive function)
- the ability to understand abstract concepts
- the control of emotions
- the expression of emotions
- the production of speech (articulation of words).

Question 6a.

Marks	0	1	Average
%	12	88	0.9

- anxiety
- tension
- depression
- anger/irritability/short temper
- hopelessness
- helplessness

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- flat effect

Question 6b.

Marks	0	1	Average
%	62	38	0.4

Either of:

- the sympathetic nervous system is stimulated during stressful events and slows the digestive system. This is part of the fight/flight survival response where blood flow and oxygen is removed from the stomach and contributes to indigestion
- David's immune system has been accustomed to fighting the stress hormones produced in the fight/flight response. His body's ability to deal with any infection from the environment is reduced. (He may have a bacterial or viral infection).

The question stipulated that the answer should be in terms of the autonomic nervous system. Therefore reference to the sympathetic nervous system, sympathetic arousal or fight/flight response was required.

Area of Study 2 – Visual Perception

Question 7a.

Marks	0	1	Average
%	32	68	0.7

The second balloon should be lower in the sky (closer to the horizon) than the first balloon.

Students were not penalised for saying that the second balloon would be drawn smaller as the question indicated that the two balloons were the same size. However, this alone did not earn a mark.

Question 7b.

Marks	0	1	Average
%	20	80	0.8

The closer tree should be more detailed than the tree further away in the picture.

The statement 'more texture' was not sufficient. It was necessary to indicate which tree would be shown in more detail.

Question 8

Marks	0	1	2	Average
%	46	36	18	0.7

Students were awarded one mark for responding that the car stays the same size despite changes in the retinal image.

Students were also awarded one mark for either of:

- as it gets closer, the retinal image of the car gets larger
- application of size constancy (gives the pictorial depth cue of relative size) means we realise that the car is closer to us, not bigger, therefore we do not cross the road.

Responses to this question were extremely poor. Most students referred to 'relative size' but did not relate this to the changing size of the image on the retina and the constancy of perception in spite of the changing image.

Question 9a.

Marks	0	1	Average
%	63	37	0.4

Perceptual set refers to a predisposition either to perceive a stimulus in a certain way (interpretation) or to select certain aspects of the visual field on which to pay attention (selection).

Question 9bi.

Marks	0	1	Average
%	27	73	0.8

Any of:

- context
- past experience
- motivation
- suggestion
- mood.

Question 9bii.

Marks	0	1	2	Average
%	46	11	43	1

Context or past experience: a person shown a series of cards displaying pictures of animals and then presented with a card showing an ambiguous figure that could be perceived as either an animal (rat) or a man, is likely to perceive the figure as an animal due to their immediate past experience of viewing animal cards. The experience with previous cards has produced a 'perceptual set' that the next card will also be an animal card.

Context: when researchers Mackworth and Loftus showed people a picture of a farmyard with a giant squid outside the barn, they were unable to recall other details of the scene, selecting the squid as the object to attend to due to the context.

Past experience: elderly people who are shown Leeper's ambiguous 'Wife or mother-in-law' picture tend to perceive the old woman through the experience of mixing with elderly people. Young people tend to perceive the young woman, through experience of being with young people.

To achieve marks for this question the factor and explanation needed to be congruent.

Question 10a.

Marks	0	1	Average
%	85	15	0.2

Perception consistently differs from objective reality.

The concept of consistency was required.

Question 10b.

Marks	0	1	2	3	Average
%	19	41	23	17	1.4

Appropriate answers included:

- Day's theory of perceptual compromise: we make a perceptual compromise to understand that the length of the two lines is the same, but the length of each whole figure is different
- apparent distance hypothesis: our reading of the illusion is based on our experience with buildings – we perceive the line with featherails as the 'inward' corner of a room, and the arrowhead line as the 'outward' corner of a building. As the lines form images of the same length, the apparently more distant line (the inward corner of the room, the featherail line) is perceived as being larger.
- Morgan, Hole and Glomster's theory that the illusion is at least partly caused by directly misperceiving where the lines end
- the Müller-Lyer illusion is based on the Gestalt principles of convergence and divergence: the lines at the sides seem to lead the eye either inward or outward to create a false impression of length
- the line with arrows pointing inwards may simply appear longer because the arrows themselves extend past the line.
- Saccadic movements – takes longer for featherails
- greater area of photoreceptors responding.

Any explanation was accepted, provided a comprehensible and appropriate reason was given.

Question 11a.

Marks	0	1	Average
%	48	52	0.5

Any of:

- the participants were not randomly selected because students volunteered and the footballers were asked to participate. This selection was not representative of the population
- each individual in the population did not have an equal chance of selection
- she did not use random or stratified sampling.

Question 11b.

Marks	0	1	Average
%	64	36	0.4

Participants were not randomly allocated because all students were in the experimental group and all footballers were in the control group. Therefore bias of results may have existed.

Area of Study 3 – States of consciousness

It is emphasised that students should be aware of elements that distinguish altered states of consciousness from normal waking consciousness.

Question 12

Marks	0	1	2	Average
%	26	38	35	1.1

Cognitive change

- difficulty paying attention
- memory difficulties or distortions of memory
- problem solving difficulties
- unable to think clearly

Perceptual change

- hallucinations
- altered perception of pain
- heightened sensitivity to other sensory stimuli
- blurred vision
- difficulty judging the passage of time

Responses of 'enhanced perception' or 'reduced perception' were too general to achieve marks.

Question 13ai.

Marks	0	1	Average
%	61	39	0.4

The EOG detects, amplifies and records electrical activity of the muscles that control eye movement.

Responses that referred to 'muscles of the eye' were incorrect. 'Electrical movement' (movement of electrons) was accepted. The term 'electrical' was essential in responses to this question.

Question 13aii.

Marks	0	1	Average
%	46	54	0.6

The EEG detects, amplifies and records the electrical activity of the brain in the form of brain waves.

Question 13bi.

Marks	0	1	Average
%	89	11	0.1

Very little or no electrical activity (due to little or no movement of eye muscles in NREM sleep)

Marks were awarded only for descriptions of what the recording would show – the electrical readings.

Question 13c.

Marks	0	1	2	Average
%	33	25	41	1.1

- K-complexes – a single low frequency, high amplitude brain wave
- Sleep spindles – brief bursts of higher frequency brain waves

Question 13d.

Marks	0	1	2	Average
%	27	22	51	1.3

Nightmares occur in REM sleep; longer episodes of REM sleep occur towards the morning.

Question 14a.

Marks	0	1	Average
%	43	57	0.6

Either of:

- all participants will experience both conditions – meditating and not meditating before going to bed at the start of the night
- all participants will be in both control (not meditating) and experimental (meditating) conditions (groups).

Students are reminded that it is essential to refer to the scenario described in the question.

Question 14b.

Marks	0	1	2	Average
%	58	20	22	0.7

Participant effects: the participants' characteristics are the same for both conditions. Therefore, this factor is even across both conditions and should not cause a difference in the results for each condition.

Any nominated personal variable that could reasonably have an effect in this study was also acceptable, such as:

- experience with meditation
- body mass
- type of insomnia.

For example, experienced meditators may achieve a trance state much more quickly than others and be more relaxed.

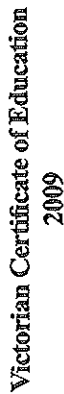
It was essential that the nominated effect and explanation were congruent.

Question 14c.

Marks	0	1	2	Average
%	8	33	60	1.5

Any of:

- their rights as a participant
- potential dangers
- withdrawal rights
- right to debriefing
- right to privacy (confidentiality)
- details of the processes involved in the study
- purpose of study (what the results will be used for).



SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures							
Words							

PSYCHOLOGY

Written examination 2

Thursday 5 November 2009

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	44	44	44
B	18	18	46
			Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 19 pages.
- Answer sheet for multiple-choice questions.

- Instructions**
- Write your **student number** in the space provided above on this page.
 - Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.
 - All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer all questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is correct or that best answers the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will not be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

AREA OF STUDY 1 – MEMORY

Question 1

Echoic memory holds sounds for _____ which enables us to _____

- A. a fraction of a second; register a fleeting visual image
B. a fraction of a second; link sounds together in order to recognise words and sentences at a later stage
C. 3-4 seconds; register visual images
D. 3-4 seconds; link sounds together in order to recognise words and sentences at a later stage

Question 2

Iconic memory lasts for

- A. a fraction of a second and retains only visual information.
- B. about a second and retains only auditory information.
- C. about 3–4 seconds and retains only visual information.
- D. up to 20 seconds if it is rehearsed.

Question 3

Which of the following statements about short-term memory (STM) is most accurate?

- A. STM only holds information transferred from sensory memory.
- B. STM holds all incoming information for around 30 minutes.
- C. STM holds all sensory information until it is encoded into long-term memory.
- D. STM holds a limited amount of encoded information while it is being processed.

Question 4

In the standard model of memory information is described as flowing through a series of stages.

According to this model, the three storage systems through which information in memory passes are

- According to this model, the most storage of information is in:
- primary memory; secondary memory; long-term memory
 - sensory memory; short-term memory; long-term memory
 - iconic memory; echoic memory; sensory memory
 - visual memory; verbal memory; spatial memory

Question 5

The memory system that stores information about personal events and general knowledge is the

- A. episodic system.
- B. semantic system.
- C. procedural system.
- D. declarative system.

Question 6

Kristy asked her big sister Mary to come with her on a bike ride. Mary had not ridden a bike since she was quite young but after a few minutes she was able to ride confidently. This is an example of Mary's _____ memory working well.

- A. declarative
- B. procedural
- C. semantic
- D. episodic

Question 7

Michael began a job as a salesman for a pharmaceutical company. He had to learn the names and uses of the company's 30 products before he was allowed to begin selling. To test his knowledge, he was asked to state the names and uses of the 30 products (Task 1).

Michael did not do well on Task 1 so he was given a list of 40 products and their uses, including the 30 he had studied, and was asked to identify the original 30 products (Task 2).

Task 1 is a test of _____ and Task 2 is a test of _____.

- A. recognition; relearning
- B. recognition; recall
- C. recall; recognition
- D. recall; relearning

Question 8

Which of the following statements is the most accurate?

- A. Relearning is a less sensitive measure of retention than recognition.
- B. Recall is a more sensitive measure of retention than recognition.
- C. The most sensitive measure of retention is recognition.
- D. The most sensitive measure of retention is relearning.

Question 9

Which of the following equations could be used to calculate a savings score?

- A. $\frac{\text{time taken for original learning} - \text{time taken for relearning}}{\text{time taken for relearning}} \times 100$
- B. $\frac{\text{time taken for relearning} - \text{time taken for original learning}}{\text{time taken for relearning}} \times 100$
- C. $\frac{\text{time taken for original learning} - \text{time taken for relearning}}{\text{time taken for original learning}} \times 100$
- D. $\frac{\text{time taken for relearning} - \text{time taken for original learning}}{\text{time taken for original learning}} \times 100$

Question 10

As we age, it is most likely that

- A. episodic memory declines more than procedural memory.
- B. semantic memory declines more than episodic memory.
- C. episodic memory and semantic memory decline at a similar rate.
- D. procedural and episodic memories both show little decline.

Question 11

Harry is a healthy 70-year-old man who has no brain disease or injury.

Choose the statement that most probably describes his memory abilities.

- A. He has joined a book club but cannot remember much about the weekly meetings.
- B. He is just as likely as a young person to recognise newly learnt information.
- C. He finds it very difficult to remember how to do activities he once enjoyed.
- D. He is likely to forget factual information that he once knew well.

Question 12

Grace tripped and hit her head on a metal post. She was unconscious for a few minutes and when she recovered she could not remember anything that had occurred in the 15 minutes before she fell.

This can best be explained by

- A. a failure of consolidation.
- B. retroactive interference.
- C. proactive interference.
- D. anterograde amnesia.

Question 13

Bronwyn played tennis in a district competition and was able to remember the names of the girls she played against each time they played. One evening at a party she saw a girl she recognised but whose name she could not recall. When the girl mentioned that she played tennis in the same district competition Bronwyn was able to recall the girl's name.

In this case, playing tennis was a _____ cue which helped Bronwyn recall the girl's name.

- A. recency
- B. primacy
- C. state dependent
- D. context dependent

Question 14

Ebbinghaus is known for his work on the features of the forgetting curve.

When Ebbinghaus tested subjects on their ability to recall nonsense syllables he found that the rate of forgetting was

- A. steady for the first two days followed by little decline after that.
- B. slow for the first 8 hours followed by a rapid decline for two days.
- C. slow for the first 20 minutes followed by a rapid decline for two days.
- D. rapid for the first 30 minutes, then slowing with little decline after two days.

Question 15

Research on patients who have sustained brain damage demonstrates that memory

- A. is permanent and resistant to damage.
- B. consists of a single system for storing all kinds of information.
- C. is permanently lost for events that occurred prior to the onset of brain damage.
- D. consists of several different systems for storing different kinds of information.

Question 16

Garry is driving home from work when his wife phones and asks him to get a list of 10 items from the supermarket. Garry tries to repeat the list over and over to himself, in order, until he gets to the supermarket.

Which items is Garry most likely to bring home?

- A. items 1 and 2, and 8, 9, and 10
- B. the middle four items
- C. items 1–3 and 4–7
- D. the last five items

Question 17

The visual-spatial sketchpad is

- A. activated by verbal command.
- B. part of long-term memory.
- C. part of working memory.
- D. part of iconic memory.

Question 18

Working memory refers to

- A. the temporary storage and processing of information that can be used to solve problems, respond to environmental demands, or achieve goals.
- B. memory for facts, images, thoughts, feelings, skills and experiences that may last as long as a lifetime.
- C. memory specifically dedicated to working only with semantic memories.
- D. memory that is expressed in behaviour, and acquired through conditioned learning and association.

Question 19

Chunking is a method used to

- A. increase the storage capacity of short-term memory.
- B. increase the storage capacity of long-term memory.
- C. decrease the storage capacity of short-term memory.
- D. decrease the storage capacity of long-term memory.

Question 20

Jean suffered a head injury as a result of a horse riding accident. She recovered well, but has difficulty remembering events that occurred up to two years prior to the accident.

This kind of memory problem is known as

- A. proactive amnesia.
- B. retrograde amnesia.
- C. retroactive amnesia.
- D. anterograde amnesia.

Question 21

Which theory explains that forgetting is a result of a fading memory trace?

- A. decay theory
- B. consolidation theory
- C. levels of processing theory
- D. motivated forgetting theory

Question 22

When phoning her sister at work Olivia asks the receptionist for her sister by her original surname, rather than her married surname, which Olivia's sister now uses.

According to the interference theory of forgetting this is an example of

- A. proactive interference.
- B. retrograde interference.
- C. retroactive interference.
- D. anterograde interference.

SECTION B – Short answer questions

Instructions for Section B

Answer all questions in the spaces provided.

AREA OF STUDY 1 – MEMORY

Question 1

William has an acquired brain injury. He has difficulty learning new information and remembering events that have occurred since his injury, however he can remember information and events that occurred prior to his brain injury.

- a. William suffers from _____ amnesia. 1 mark
- b. Despite his amnesia William is able to learn new motor skills such as playing guitar. Which type of long-term memory can William still create? 1 mark

Question 2

- a. According to the semantic network theory, how is information stored in long-term memory? 2 marks

- b. According to the semantic network theory, how is information retrieved from long-term memory? 1 mark

- c. According to the semantic network theory, what determines how quickly memories can be retrieved? 1 mark

Question 3

Waleed has asked you to recommend a mnemonic technique to help him recall a list of words in order. Using an example, explain how the following list of words could be encoded and retrieved using the Method of Loci.

Words to remember – chocolate hair elephant beach fingers

Question 4

Two groups of participants studied a list of words under one of two encoding conditions.

Group 1: Participants were asked to repeat each word in the list.

Group 2: Participants were asked to generate a word similar in meaning to each of the words in the list.

After the study phase, participants were asked to recall as many words as they could.

Which group of participants was likely to recall the most number of words? Explain why.

3 marks

2 marks

Question 5

According to Freud, we can repress memories.

- a. What is repression?

1 mark

- b. Explain the difference between repression and suppression.

1 mark

- c. Repression and suppression are both forms of _____ forgetting.

1 mark

AREA OF STUDY 3 – RESEARCH INVESTIGATION

Read the following research study. All the questions which follow relate to this study.

Doctor Fraser is a university research psychologist. His area of expertise is the development of literacy skills in children.

Doctor Fraser has designed a new literacy program for Grade 4 children in Victoria. It is a 30-minute television literacy program that runs daily for four weeks.

To test this program, Doctor Fraser sent a letter to all parents/guardians of Grade 4 children in Victoria asking for volunteers. The children of the first 100 parents/guardians who replied were accepted into the study.

Prior to the experiment, each participant sat a literacy test (Literacy Test A) administered by their Grade 4 teacher. The teachers then sent the results to Doctor Fraser.

Participants were put into 50 pairs based on gender and the similarity of their scores on the literacy test (Literacy Test A).

A computer program was used to select, by chance, one member of each pair to undertake the literacy program. These participants had to watch the literacy program on television for 30 minutes each day for four weeks.

The other member of the pair was allowed to watch cartoons of their choice for 30 minutes per day for four weeks.

At the end of four weeks, the participants' Grade 4 teachers administered a second literacy test (Literacy Test B) and sent the results to Doctor Fraser.

Results between the two groups were then compared. A test of significance was calculated and $p > 0.05$.

All ethical guidelines were strictly followed.

Question 10

Write an appropriate operational hypothesis for this study.

2 marks

Question 11

Name the independent variable and the dependent variable in this study.

Independent variable _____

Dependent variable _____

2 marks

Question 12

Were the participants in this study randomly allocated? Explain what is meant by random allocation.

2 marks

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Question 13

- a. Name the experimental research design that was used in this study. In terms of this study, explain your answer.

2 marks

- b. Name one other experimental design. What is one disadvantage of this experimental design compared to the experimental design that Doctor Fraser has used?

2 marks

Question 14

The researcher set the level of significance at 0.05. What does a level of significance of 0.05 mean?

1 mark

Question 15

Was there a statistically significant difference between the results of the two groups of participants?

1 mark

GENERAL COMMENTS

Students performed well on the Multiple-choice section of the 2009 Psychology exam paper. Responses to the Short answer section showed a greater spread of achievement. The scores in the Short answer section (overall mean 55%) were 'Memory' (59%), 'Learning' (54%) and 'Research Methods' (54%). In the Multiple-choice section, the mean scores were 'Memory' (81%) and 'Learning' (83%).

Students are encouraged to respond to each question. Leaving a line blank increases the likelihood that later answers on the computer-scored sheet will be out of synchronisation and further marks may be lost. It is advised that use of a ruler, moved down the page as each question is answered, will help to ensure that the correct response line is being completed.

In the Short answer section, some students failed to address the specific instructions in questions. For example, 'According to the semantic network theory' (Question 2), '... using the method of loci' (Question 3), 'Using the terms of operant conditioning ...' (Question 8b.) and 'Using the terms of ...' (Question 9b). Students also struggled to relate their answers to the specific scenarios described in the questions, for example, 'Max' in Question 8 and 'Pete' in Question 9a. Students appeared to have some difficulty interpreting questions and often did not gain marks due to a lack of precision in their responses. In both the Memory and Learning Areas of Study, the mean score on the Multiple-choice section was, as in previous years, substantially superior to the mean score on the equivalent Short-answer section.

Often in Psychology examinations students will be asked for two pieces of information or two examples. Students must ensure that two pieces of information are given in questions such as this. In Question 12 of Area of Study 3, students were required both to state whether or not participants had been randomly allocated and to explain this answer. Students who did not complete both parts therefore could achieve only one of the two marks.

Almost all questions requiring two parts to an answer showed two separate response spaces on the answer booklet.

All questions in Area of Study 3 required reference to the research study described in the question, as stated in the instructions on the examination paper. Generic answers cannot show clear understanding and interpretation of the specific research study and thus cannot gain full marks.

Students are reminded that while slight spelling errors are not penalised, the meaning must be clear and unambiguous. Substitution of another word, which therefore changes the meaning, is not allowed.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Memory					
1	83	10	2	87	
2	83	2	13	2	
3	16	4	13	66	Option A eliminated the possibility of storing information from long-term memory, and option B indicated that short-term memory lasts for about 30 minutes – both of which are incorrect. Option C referred to sensory information; if sensory information is retained it can only be in sensory memory as the first encoding must occur when paying attention in order to transfer information into short-term memory.
4	1	98	1	0	
5	19	10	1	70	Many students chose option A; this shows the importance of reading all options, even though the first option may appear to be a possible correct response.
6	2	92	2	3	
7	2	3	88	8	
8	4	5	6	84	
9	7	3	86	3	
10	62	12	10	17	Procedural memory shows little or no decline with age. Procedural memory and (well-learned) semantic memory show little decline in a healthy older person.
11	19	58	4	20	
12	74	10	4	11	
13	2	2	13	83	
14	3	6	13	78	
15	3	6	11	80	
16	89	1	6	4	
17	1	4	82	13	
18	86	7	4	3	
19	93	5	1	0	
20	2	83	6	9	
21	96	2	0	1	
22	69	5	22	4	Anterograde (option D) and retrograde (option B) are terms used to nominate different types of amnesia, not interference. Students who chose option D correctly identified that the difficulty related to newer learning but incorrectly identified amnesia.
Area of Study 2 – Learning					
23	1	2	89	8	
24	2	96	1	1	
25	87	11	1	1	
26	1	4	3	92	
27	85	5	5	5	
28	11	83	3	3	
29	2	10	85	3	
30	1	88	9	1	
31	86	2	3	8	
32	4	2	4	90	

Question	% A	% B	% C	% D	Comments
33	33	31	25	11	Options A and C were accepted as correct responses. If the conditioning was considered as 'operant' then the answer must have been 'A'; if the conditioning is 'classical' then the answer was 'C'. Option B was not a correct response. Negative reinforcement refers to strengthening a response or increasing the frequency of the response.
34	97	1	1	1	Reinforcement strengthens a response. It was clear that students who chose option C lacked understanding of this basic fact.
35	2	70	18	11	
36	77	18	4	1	Students who chose option D showed a lack of understanding of the principles of classical conditioning. The unconditioned stimulus elicits the unconditioned response – this is the reflexive response that is an essential feature of classical conditioning.
37	71	2	5	21	
38	11	5	78	5	
39	84	10	4	2	
40	76	12	6	6	
41	3	3	87	7	
42	11	2	2	85	
43	78	19	1	2	
44	77	6	15	2	

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Area of Study 1 – Memory

Question 1a.			
Marks	0	1	Average
%	18	82	0.8

Anterograde

Students were required to give a single-word answer – other words were not permitted.

Question 1b.			
Marks	0	1	Average
%	14	86	0.9

Procedural memories

Question 2a.			
Marks	0	1	Average
%	37	23	1.1

theory are:

- hierarchical structure
- nodes
- links.

Each concept (node) linked to other related nodes in a hierarchical manner. Three essential aspects of semantic network

2009 Assessment Report

Question 2b.

Marks	0	1	Average
%	59	41	0.4

We search long-term memory for one piece of information which then leads to retrieval of related information through the links.

Question 2c.

Marks	0	1	Average
%	55	45	0.5

The shorter the link between nodes in the network, the stronger the association between them and the less time it takes to retrieve related concepts. Therefore, the more closely your retrieval cue is linked to the memory you are trying to retrieve, the faster you will retrieve it.

Question 3

Marks	0	1	2	3	Average
%	39	28	20	13	1.1

Method of Loci: visually imagine each object located at a different place in a familiar room or along the route of a well-known journey

To recall the objects, mentally retrace that route.

For example, imagine your route to school and visualise a bar of chocolate at your front gate, a huge head of hair on the pedestrian crossing supervisor, an elephant waiting at the intersection, a view of the beach from the school yard and a giant hand pointing to your classroom. When you wish to retrieve the list, imagine your route to school and the various locations will act as retrieval cues for the items you have visually linked to the locations.

For full marks it was essential that a response demonstrated:

- visualisation process
- method of visualising to assist encoding
- method of visualising to assist retrieval
- all five items are required in order as instructed in the question.

Question 4

Marks	0	1	2	Average
%	13	28	59	1.5

Group 2: Generating a word similar in meaning to those in the list enables better storage of the word in a semantic network of long-term memory. The new words will act as retrieval cues for the original list.

Group 1 used maintenance rehearsal whereas Group 2 used elaborative rehearsal, a more effective way of encoding information in long-term memory.

Question 5a.

Marks	0	1	Average
%	35	65	0.7

The unconscious blocking of memory of an experience from conscious awareness (because of the distressing or disturbing nature of the experience)

Students were not awarded marks if they used the term 'repressed' in their response without explanation. Responses such as 'repression is when memories are repressed unconsciously' did not gain a mark.

Question 5b.

Marks	0	1	Average
%	34	66	0.7

2009 Assessment Report

Repression refers to the unconscious blocking of memory of an experience, whereas suppression refers to a conscious process.

Question 5c.

Marks	0	1	Average
%	10	90	0.9

Motivated

Area of Study 2 – Learning

Question 6

Marks	0	1	2	Average
%	9	41	50	1.4

Two of:

- no harm principle: Albert suffered psychological damage that was not reversed
- voluntary participation: it is unlikely that Albert's mother was aware that he was the subject of the experiment
- informed consent: Albert's parent(s) was not told what would be involved in the experiment and did not agree that he could take part
- withdrawal rights: Albert was not allowed to leave the experimental situation
- debriefing: Albert's parent(s) was not told what had been discovered and was not informed of how they could receive assistance reversing any harmful effects on Albert
- beneficence: the importance of the findings was not sufficient to outweigh the harm done to Albert
- confidentiality: the film was publicly released and Albert's first name and the initial letter of his family name were well known.

It was essential that the named ethical consideration matched the description.

Question 7a.

Marks	0	1	Average
%	15	85	0.9

One trial or single trial

Question 7b.

Marks	0	1	2	Average
%	36	27	37	1

Two of:

- classical conditioning usually takes several pairings of two stimuli for learning to occur, whereas one-trial learning only takes one pairing
- in classical conditioning, the conditioned response occurs immediately after the conditioned stimulus (or neutral stimulus) and unconditioned stimulus pairing. In one-trial learning, the conditioned response can occur a long time after the conditioned stimulus
- one-trial learning does not usually generalise the conditioned stimulus to other similar stimuli, whereas classical conditioning does generalise
- the response (unconditioned response) of feeling ill is very powerful. In one-trial learning, the conditioned response is very difficult to extinguish. It is easier to extinguish in classical conditioning.

Question 7c.

Marks	0	1	Average
%	78	22	0.2

Sight of grapes

Question 7d.

Marks	0	1	Average
%	59	41	0.4

The feeling of nausea at the sight of the grapes

Marks	0	1	Average
%	74	26	0.3

The feeling of nausea due to the virus

It was essential to differentiate the conditioned response (nausea due to grapes) from the unconditioned stimulus (nausea due to virus).

Marks	0	1	Average
%	20	80	0.8

Either of:

- Max could be rewarded with a sticker for every five minutes he remained in his seat (positive reinforcement)
- Max could be scolded when he gets out of his seat (punishment)

Marks	0	1	2	Average
%	27	27	45	1.2

Either of:

- the psychologist gives Max a sticker for every session he does not get out of his seat. The sticker acts as positive reinforcement to encourage the behaviour of staying in his seat
- the psychologist scolded Max when he tried to leave his seat. This acted as punishment, making it less likely that Max would repeat the behaviour.

Many students continue to confuse negative reinforcement (which strengthens a response) with punishment (which weakens a response).

Marks	0	1	Average
%	55	45	0.5

Positive transfer occurs where learning in one situation enables learning in a new situation to be quicker and/or easier. In learning Spanish, Peter may have developed skills in learning vocabulary or grammatical structures and these skills improve his ability to learn Italian.

Marks	0	1	2	Average
%	39	45	16	0.8

Petra learned to play netball and became skilled in a few weeks. Later her friends persuaded her to try basketball but she found it difficult to learn to run and dribble the ball because she was used to 'stopping and propping'.

The emphasis must have been on learning to learn. Students did not get full marks for simply indicating that there are different skills required, so Petra would not be as good at basketball as she was at netball. For full marks the answer needed to clearly demonstrate that the negative transfer affects the ability to learn, not simply the ability to perform.

Area of Study 3 – Research Investigation

Marks	0	1	2	Average
%	24	16	61	1.4

Grade 4 children in Victoria who watched the literacy program on television will show a greater increase in literacy skills (operationalised as difference in score between literacy tests A and B) than participants who watched cartoons of their choice.

An operational hypothesis is a stated prediction of the outcome of the experiment that includes:

- statement of the population
- statement of the independent variable (IV)
- statement of the dependent variable (DV)
- operationalisation of the dependent variable.

If the independent variable was continuous it would also be operationalised.

A correct response included appropriate operationalisation of the dependent variable and statement of the population, the independent variable and dependent variable.

Students needed to demonstrate their understanding of the concept of operationalisation and their understanding that a hypothesis is a statement of the predicted effect of a change in the independent variable on the value of the dependent variable.

A hypothesis cannot be expressed as a question; some students continue to make this error.

Marks	0	1	2	Average
%	16	16	68	1.5

Question 11

Independent variable: watching the literacy program or watching cartoons of choice

Dependent variable: literacy skills in children (operationalised as improvement in score on test B compared with test A)

Question 12

Marks	0	1	2	Average
%	27	23	50	1.3

Yes. The computer placed, by chance, one of each pair in each of the groups. Each participant had an equal chance of being in either group.

Question 13a.

Marks	0	1	2	Average
%	31	16	53	1.2

Matched participants (matched pairs) or matched subjects. Participants were matched based on similar literacy skills (score on test A) and gender. One participant was then allocated to E group and the other to C group.

Question 13b.

Marks	0	1	2	Average
%	32	20	49	1.2

Independent groups disadvantage

- need more participants for the same strength of results
- participant variables such as gender and literacy skills are not controlled

Repeated measures disadvantage

- order effects such as learning or boredom may interfere with results
- more time would be needed (an extra four weeks)

Question 14

Marks	0	1	Average
%	81	20	0.2

There is a 5 in 100 (or 1 in 20, or 5 per cent) probability that the results are due to chance alone.

Many students misunderstood the meaning of the term 'probability'. It does not mean that five times in 100 this result will occur by chance. The question was 'What does a level of significance of 0.05 mean?'; however, many students answered as if the question read 'What does $p < 0.05$ mean?'.

Question 15

Marks	0	1	Average
%	41	59	0.6

No

Question 16

Marks	0	1	2	Average
%	38	19	43	1.1

In this question students needed to name one uncontrolled variable and then explain how this variable affected results.

Question 17

Marks	0	1	2	Average
%	35	27	39	1.1

No, these results should not be generalised.

Any of:

- participants were selected according to who volunteered in the first 100
- participants were not randomly selected
- not every Grade 4 child had an equal chance of being selected.

Question 18

Marks	0	1	2	Average
%	39	53	8	0.7

- full explanation of the findings in this study
- information about where and how to seek psychological help (counselling) if needed
- the right to withdraw data after the experiment

Debriefing takes place after the research has been concluded and conclusions have been drawn. Many students indicated that participants should be told what would be involved in the research, for example, incorrectly implying that debriefing occurs before the research.

There was no deception involved in this research, so comments relating to deception were irrelevant.